
FRBSF WEEKLY LETTER

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Market Expectations and Fed Policy

On Wednesday, the 25th of July, Federal Reserve Board Chairman Paul Volcker presented the Fed's mid-year report on monetary policy to the Congress. His testimony was widely interpreted to mean that the Federal Open Market Committee—the Fed's monetary policy making arm—had left its policies unchanged in its July meeting. When markets closed on the 26th, the yield on 30-year Treasury bonds had fallen from 13.13 percent to 12.74 percent. In contrast, the yield on short-term Treasury bills remained largely unchanged.

Why should an announcement of unchanged monetary policy have led to a decrease in long-term bond yields? This *Letter* shows that such a movement in rates is consistent with a change in expectations held by market participants. We begin by discussing the importance of expectations and then focus on expectations of Federal Reserve behavior and how market participants form these expectations. This discussion provides the background for examining the relationship between changes in expectations of Fed policy and the recent behavior of interest rates.

Why expectations matter

Expectations are important in financial markets because an asset is a vehicle for transferring purchasing power from today into the future. It is therefore necessary for financial markets to estimate what assets purchased today will be worth tomorrow. For example, since inflation affects the future value of an asset, a decision about what asset to hold will depend upon the forecasted rate of inflation. If actual inflation turns out not to be as expected, participants will, in general, not do as well as they might have. Obviously, the larger the error in forecasting inflation the larger any losses may be. As a result, firms operating in financial markets employ large numbers of experts who use sophisticated techniques to predict inflation and other economic factors that will affect the future value of assets.

Forecasting Fed behavior is clearly important for financial market participants since the future state of the economy depends, in part, upon the monetary policy pursued both now and in the future. An individual who attempts to forecast inflation,

for example, must first try to predict what the Federal Reserve will do over the relevant time period. We now examine the way in which individuals form expectations about how the Fed will behave in the future.

Predicting Fed behavior

Essentially, the problem of predicting what the Fed will do can be divided into two components. First, one must determine what sort of policy rule the Fed is following, i.e., under what conditions will it undertake a particular step. Second, one must determine whether the conditions that will evoke a response according to the policy rule actually exist in the economy.

It is difficult for outside observers to determine what rule the Fed is following partly because the Fed has multiple objectives and may vary the importance it attaches to these objectives over time. For example, at any one point, the Fed is likely to be concerned with variables such as the rate of inflation, interest rates and the unemployment rate. Outside observers find it difficult to determine how strongly the Fed will react to changes in these numbers. In the past, this has led to a credibility problem as some observers have questioned the Fed's determination to pursue its stated goals. Although there is reason to believe that credibility is less of a problem now with regard to the Fed's anti-inflation stand than in the past, some uncertainty still lingers.

There is greater uncertainty regarding the Fed's behavior in the short-run. While broad monetary targets for one-year intervals are announced in semi-annual reports to Congress, these target ranges are wide enough to permit considerable variation in the short-run details of policy. (The fact that the Fed usually does not attain these targets has contributed to the credibility problem mentioned earlier.) Furthermore, since the FOMC's deliberations are made public only with a lag, market participants find it difficult to determine what actions the FOMC has taken.

How do market participants cope with this uncertainty? Under the conditions discussed above, individuals infer FOMC actions from the

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behavior of variables most likely to be affected. Thus, for instance, individuals focus closely on movements in the Federal Funds rate and the monetary aggregates to determine whether policy is "tight" or "easy" in a particular period. They also watch these variables over time to learn how the Fed reacts in certain circumstances.

Past behavior as guide

Market participants must also determine how the Fed will behave in the future. Past information is relevant in forecasting monetary policy during events of a recurring nature, e.g., the business cycle. If past experience suggests that the Fed tightens credit availability when the economy grows too fast, it is reasonable to expect that the Fed will do the same under similar conditions in the future. The next thing market participants must do is determine when sufficient inflationary pressures exist in the economy to induce the Fed to act. When these conditions are perceived to exist, individuals will at once modify their behavior to take advantage of the Fed's anticipated actions, having calculated what impact these actions are likely to have.

We now focus the remaining discussion on interest rate behavior because of its importance to financial market participants. Assume, again, that the Fed is expected to tighten credit in the future. While short-term interest rates will be expected to be higher in the future, the market will start demanding higher interest rates for loans made today but which extend over the period expected to be subject to "tight" money.

The "Expectations Theory" of the term structure of interest rates provides an explanation for this market response. The theory is based on arbitrage behavior by financial market participants, which presumably ensures that financial assets of different maturities are good substitutes for each other for any prospective investor. Indeed, if all securities were perfect substitutes, investors would buy and sell securities of different maturities to equalize their yields within any holding period. For example, the expected return from holding a 6-month Treasury Bill to maturity should be the same as holding two successive 3-month Treasury Bills to maturity.

That securities of different maturities are not perfect substitutes in reality does not vitiate the principal implications of the expectations theory

of the term structure. Long-term rates rise along with short rates if the change that led to higher current short rates is expected to be permanent, or at least longlasting.

How important are such expectations in determining current interest rates? When the Commerce Department released its flash estimates for the second quarter of this year on June 20th, the figures showed that second quarter GNP growth would likely be 5.7 percent—an increase that was larger than expected. Bond prices fell by about 2 points (or \$20 for every \$1,000 of face value) immediately. This reaction is easily understood in the context of the discussion above. The flash estimates were seen as evidence of conditions that would force the Fed to tighten credit availability (in line with its anti-inflationary "rule") in order to slow down an overheated economy. Given that tight money would raise short rates, current long-term rates increased at once, causing long-term bond prices to fall.

Incorporating new information

Information about factors such as GNP growth and money growth is useful only in circumstances similar to those that have existed in the past. Considerable new uncertainty may exist when prevailing conditions are unusual. If insufficient evidence is available, the market is likely to hold widely divergent views about what the Fed is likely to do, and any action by the Fed will surprise at least some market participants. Those who are surprised will have to adjust their expectations about the Fed's future behavior. And any such revision in expectations will have an impact on asset prices and interest rates.

There is reasonable evidence to believe that such a shift in expectations occurred in recent months, when an increase in the short-term rates was accompanied by an even greater increase in long-term rates. The following figures are evidence. On January 2nd, the yield on 3-month T-bills was 9 percent while that on 30-year Treasury bonds was 11.9 percent. On the 1st of March, the spread between the two was almost exactly the same. However, on the 30th of May, while the yield on 3-month Treasury bills had risen only to 9.76 percent, the yield on 30-year Treasury bonds was 13.92 percent—a difference of 4.16 percent.

It follows from the discussion above that this exaggerated response of long-term rates is possible

only if short-term rates were expected to rise even more in the future than the increase in current short rates. Below, we discuss how this revision in expectations may have occurred. But before doing so, it would be useful to point out how unusual this behavior of long rates was in the context of the business cycle. In the past, short-term rates have risen as the economy moved toward the peak of a cyclical expansion, long-term rates have not varied much. In rare cases, short rates have even moved higher than long rates.

Evidence that the Fed had "tightened" credit became available only gradually with the upward drift in the Federal Funds rate over the March-May period—from 9.73 percent on March 1st, to 11.09 percent on May 1st. (Note, however, that part of this increase may have been due to market conditions.) There are several reasons to believe that this rate rise came as a surprise. First, some analysts argued that a rise in interest rates would be harmful to the debt situation of the less developed countries and, through them, to the health of the banking system. Second, other observers argued that the Fed, being sensitive to political pressures, might hesitate to raise interest rates in an election year. Finally, some participants may have felt that the Fed would not tighten credit given the unusually high real interest rates that prevailed.

Consequently, there was sufficient reason for some observers to question whether the Fed would continue to follow a rigorous anti-inflation policy. In particular, some analysts believed that the Fed would not tighten credit even if the economy grew "too fast." However, the rising Federal Funds rate was evidence against this belief. Market participants realized that the Fed would disregard the factors mentioned above and continue to behave as it did in the recent past. This information, combined with the expectation of greater credit demands in the future (because the

economy showed no signs of slowing to a "manageable" level) convinced these participants that short rates would go up even further.

As a result, long-term rates increased by more than short rates when the Fed tightened credit availability. Its action signaled to the market that the Fed would tighten even further in response to the greater inflationary pressures expected to prevail in the future. The visible impact of this upward revision in expected future short rates was the rise in current long-term rates in May.

However, since May there has been little evidence of tightening by the Fed. The Federal Funds rate, for instance, has remained stable in the 11-11½ percent range. The market also has interpreted the Congressional testimony of Chairman Volcker to indicate that no further tightening has occurred. As a result, market participants realized that future short rates would not be as high as they had thought. The subsequent downward revision in expectations is what caused the decline in long rates mentioned in the beginning of this *Letter*, while short rates remained more or less the same.

Policy implications

The case discussed above illustrates the necessity of taking expectations into account when interpreting economic developments and drawing policy implications. The increase in long rates that occurred from April to May coincided with an increase in the Federal Funds rate. Some observers had suggested that a future increase in this rate would lead to even greater increases in bond yields. However, our analysis has shown that the two changes coincided because market participants interpreted the increase in the funds rate as a signal of greater restraint by the Fed in the future. Long rates declined (relative to short rates) when this increased restraint failed to materialize.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT (Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 8/8/84	Change from 8/1/84	Change from 12/28/83	
			Dollar	Percent Annualized
Loans, Leases and Investments ^{1 2}	181,303	— 555	5,278	4.8
Loans and Leases ^{1 6}	162,262	— 610	6,907	7.2
Commercial and Industrial	48,911	— 32	2,948	10.4
Real estate	60,538	— 2	1,639	4.5
Loans to Individuals	29,041	54	2,390	14.5
Leases	5,030	25	— 33	— 1.0
U.S. Treasury and Agency Securities ²	11,871	40	— 636	— 8.2
Other Securities ²	7,170	14	— 993	— 19.7
Total Deposits	188,455	—1,846	— 2,542	— 2.1
Demand Deposits	43,538	—2,276	— 5,699	— 18.8
Demand Deposits Adjusted ³	29,747	— 10	— 1,584	— 8.2
Other Transaction Balances ⁴	12,491	23	— 284	— 3.6
Total Non-Transaction Balances ⁶	132,426	407	3,441	4.3
Money Market Deposit Accounts—Total	37,824	— 122	— 1,773	— 7.2
Time Deposits in Amounts of \$100,000 or more	39,875	— 713	1,710	7.2
Other Liabilities for Borrowed Money ⁵	18,911	—2,502	— 4,096	— 28.9
Weekly Averages of Daily Figures	Week ended 7/30/84	Week ended 7/16/84		
Reserve Position, All Reporting Banks				
Excess Reserves (+)/Deficiency (—)	61	— 23		
Borrowings	111	59		
Net free reserves (+)/Net borrowed(—)	— 50	— 81		

¹ Includes loss reserves, unearned income, excludes interbank loans

² Excludes trading account securities

³ Excludes U.S. government and depository institution deposits and cash items

⁴ ATS, NOW, Super NOW and savings accounts with telephone transfers

⁵ Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources

⁶ Includes items not shown separately